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ENGINE LUBRICATION SYSTEM

ABSTRACT OF THE DISCLOSURE

A lubrication system for an internal combustion engine having a pressure increasing valve and a pressure regulator valve to optimize oil flow through an engine to increase engine efficiency. The lubrication system
5 includes an engine driven oil pump connected to supply pressurized oil through a main oil feed to a main bearing gallery, a cam gallery, a cam phaser and switching valve lifters. The pressure increasing valve connected between the main bearing gallery and the cam gallery restricts oil flow to the cam gallery to raise oil pressure supplied to the cam phaser. The pressure
10 regulator valve connected between the pressure increasing valve and the cam gallery to control oil pressure supplied to the switching lifters for cylinder deactivation or stepping valve train operation. The optimization of oil flow allows the engine to use a smaller oil pump and thereby increase engine efficiency while providing for actuation of the cam phaser or the switching
15 lifters over the full engine speed range.